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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,490	07/25/2003	Manoharprasad K. Rao	FGT 1827 PA	1489

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EXAMINER

LIEU, JULIE BICHNGOC

ART UNIT	PAPER NUMBER
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2636

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/604,490

Applicant(s)

RAO ET AL.

Examiner

Julie Lieu

Art Unit

2636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is in response to Applicant's amendment filed March 02, 2005.

Claims 1, 14, and 20 have been amended.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 1-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shyu (US Patent No. 5,091,726) in view of Schofield et al. (US Patent No. 6,498,620).

Claim 1:

Shyu discloses an object detection system for a vehicle comprising:

- a. A plurality of sensing system 111, 112, 121, 122 comprising frontal collision sensing system and having at least one receiver and generating an object detection signal
- b. A controller 3 comprising a plurality of sensing system aid modules corresponding to each of the plurality of sensing systems, selecting and operating at least one of the plurality of sensing system aid modules in response to the at least one vehicle parameter and generating at least one safety system signal in response to the object detection signal (display); and

- c. The plurality of sensing system aid modules have a plurality of associated active operating modes (e.g. detecting mode) and operate at least one of the sensing system in response to the at least one vehicle parameter (e.g. warning mode and control mode).

See figure 1.

Shyu fails to clearly specify that the sensing systems are vision. However, the use of vision sensing systems on a vehicle to aid in collision avoidance is well known in the art as taught in Schofield wherein sensing devices are vision. In light of this teaching and as technology advances, it would have been obvious to a skilled artisan to use vision sensing systems in the Shyu system because they are well known and further provide image of the sensed obstacles which is an advantage.

Claim 2:

The plurality of vision sensing systems in the combined system of Shyu and Schofield is selected from at least one of a front and rear collision vision sensing system, a rearward collision vision sensing system, and a side collision vision sensing system. See fig. 1.

Claim 3:

The controller 3 system in Shyu operates the plurality of vision sensing system in the in at least one mode selected from reversing-aid mode, parking aid mode, and a pre-collision sensing mode, and adaptive cruise control mode, a lane departure aid mode, and a lane-keeping aid mode.

Claim 4:

Shyu discloses a countermeasure device 34

Claim 5:

The plurality of collision avoidance and countermeasure modules in the combined system comprises at least one module (selected from a sensing systems in at least one mode selected from a pre-collision sensing mode, and adaptive cruise control module, a lane departure aid module, and a lane-keeping aid module.

Claim 6:

The plurality of sensing system aid modules in Shyu comprises a plurality of comfort and convenience modules.

Claim 7:

The plurality of comfort and convenience modules in Schofield comprises at least one module selected from a reversing-aid module and parking-aid module. Thus, one skilled in the art would have readily recognized the desirability of incorporating these module in the system of Shyu's because it would add to the existing system more controlling capability to control the vehicle.

Claim 8:

Though Shyu fails to disclose the use of transmission gear sensor, Schofield discloses a gear sensor generating a transmission gear signal wherein the controller operates the plurality of sensing system aid modules in response to the transmission gear signal. This infers by the display overlay 70 and 70a. In light of Schofield, a skilled artisan would have readily recognized using gear sensor in the system of Shyu because it would provide further operation control for the vehicle.

Claim 9:

The sensing system in Schofield comprises a side collisions sensing system and the controller continuously operates the side collision sensing system in a pre-collision sensing mode. That is, the side imaging sensors continuously takes images of the surrounding within its field of view. It would have been obvious to one skilled in the art to incorporate this feature in the Shyu system because it provides further sensing ability to prevent collision.

Claim 10:

The vision sensing system in the combined system of Shyu and Schofield comprises at least a frontal collision sensing system and the controller operating the at least one frontal collision sensing system in at least one mode selected from reversing-aid mode, parking aid mode, and a pre-collision sensing mode, and adaptive cruise control mode, a lane departure aid mode, and a lane-keeping aid.

Claim 11:

The sensing system in Schofield comprises at least one rearward collision sensing system and the controller operating the at least one rearward collision sensing system in at least one mode selected from a parking-aid mode, a reversing-aid mode, and a pre-collision sensing mode.

Claim 12:

The controller 3 is a single processor.

Claim 13:

The indicator 120 is electrically coupled to the controller and wherein the controller indicates the safety system signal via the indicator.

Claims 14-16:

The rejection of claims 14-20 recites the rejection of claims 1, 8, and 9, respectively, except they are method claims.

Claim 17:

The rejection of claim 17 recites the rejection of claim 10, except it is a method claim.

Claim 18:

The rejection of claim 18 recites the rejection of claim 11, except it is a method claim.

4. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shyu (US Patent No. 5,091,726) in view of Schofield et al. (US Patent No. 6,498,620) and further in view of Okamoto (US Patent No. 6,587,760).

Claim 19:

Neither Shyu nor Schofield discloses determining the vehicle velocity and operating the sensing system aid modules in response thereto. Nonetheless, the idea is well known in the art as evidenced in Okamoto wherein the system determine the speed and the steering angle to provide message according thereto. Thus, it would have been obvious to one skilled in the art to employ this teaching in the system of Shyu and Schofield because it is useful in providing information to a driver, especially when the vehicle is driven the reverse direction.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schofield et al. (US Patent No. 6,498,620) in view of Shyu (US Patent No. 5,091,726)

Claim 20:

Schofield discloses an object detection system for a vehicle comprising:

- a. Transmission gear sensor generating a transmission gear signal (col. 17 line 29-31)
- b. A plurality of vision sensing systems 14, 16 having at least one vision receiver, generating an object detection signal, and operating simultaneously in a plurality of modes selected from a reversing-aid mode, a parking-aid mode, a pre-collision sensing mode, an adapted cruise control mode, a lane departure aid mode, and a lane-keeping aid mode; and
- d. A single vision processor 18 comprising a plurality of sensing system aid modules corresponding with each of the plurality of vision sensing systems, operating the plurality of sensing system aid modules in response to the transmission gear signal, and generating at least one warning signal or one countermeasure signal in response to the object detection signal.

The operation operating simultaneously in a plurality of modes selected from reversing-aid mode, parking aid mode, and a pre-collision sensing mode, and adaptive cruise control mode, a lane departure aid mode, and a lane-keeping aid mode. Though it is not clear that the parking aid mode in Schofield is corresponding to both frontal and rearward detection, one skilled in the art would have readily recognized that the Schofield displays the result of the detection. Thus, the reference implicitly teaches the parking aid mode (when driver intends to operate the vehicle such that it would be parked) corresponding to both frontal and rearward detection. Furthermore, Shyu disclose frontal and rear detection on a vehicle. A skilled artisan would have readily recognized applying this teaching the system of Schofield because it would enhance the safety of the system.

Remarks

6. Applicant's arguments filed 3/2/05 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

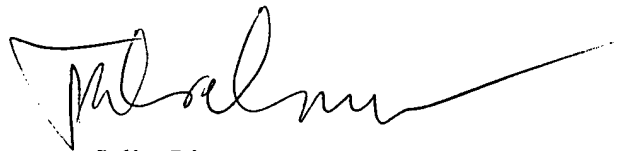
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Lieu whose telephone number is 571-272-2978. The examiner can normally be reached on MaxiFlex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on 571-272-2981. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Julie Lieu', with a long horizontal flourish extending to the right.

Julie Lieu
Primary Examiner
Art Unit 2636

Jun. 10, 05